

CLAIMS

1. A process for the manufacture of a decorative surface element, which element comprises a base layer, a decor and a wear layer of a UV or electron beam curing lacquer, characterised in that one or more structured surfaces, forming embossing surfaces of one or more rollers or moulds, are positioned on top of the decorative lacquered surface, possibly after having cured the lacquer to a desired viscosity, and are continuously or discontinuously pressed on to this, whereby the lacquer will be provided with a surface structure which enhances the decorative effect of the decor, whereupon the wear layer is completely cured.
2. A process according to claim 1, characterised in that the lacquer consists of an acrylic or a maleamide lacquer.
3. A process according to claim 1 or 2, characterised in that the wear layer is applied in several steps with intermediate partial curing.
4. A process according to any of the claims 1 - 3, characterised in that the wear layer includes hard particles with an average particle size in the range 50nm - 150µm.
5. A process according to claim 1, characterised in that the base layer consists of a particle board or a fibre board.
6. A process according to claim 1, characterised in that the base layer consists mainly of a polymer such as polyurethane.
7. A process according to any of the claims 1 - 6, characterised in that the surface element contains a layer which is elastic at least before the complete curing, the elastic layer being selected from the group; the base layer, a primer layer, the decor layer and the wear layer.
8. A process according to any of the claims 1 - 7, characterised in that one or more glazing rollers is pressed towards the surface structured wear layer before the complete curing stage.

9. A process according to any of the claims 1 - 8, characterised in that the structured rollers are heated to a surface temperature above 40°C, preferably in the range 50°C - 150°C.
10. A process according to any of the claims 1 - 8, characterised in that the glazing rollers are heated to a surface temperature above 30°C, preferably in the range 35°C - 100°C.
11. A process according to any of the claims 1 - 7 or 9, characterised in that a thin top coat is applied on top of the structured wear layer.
12. A process according to any of the claims 8 - 10, characterised in that a thin top coat is applied on top of the structured wear layer after the glazing stage.
13. A process according to any of the claims 8 - 10, characterised in that a thin top coat is applied on top of the structured wear layer before the glazing stage and that the top coat is partially cured before the glazing.
14. A process according to any of the claims 11 - 13, characterised in that the top coat is comprised of acrylic or maleamide lacquer and possibly an additive in the form of hard particles with an average particle size in the range 50nm - 10µm.
15. A process according to any of the claims 1 - 14, characterised in that each structured roller is provided with a counter stay roller between which the surface element is passed.
16. A process according to any of the claims 8 - 15, characterised in that each glazing roller is provided with a counter stay roller between which the surface element is passed.
17. A process according to claim 15, characterised in that the surface element has a thickness T and that the distance between each structured roller and corresponding counter stay is set in the range T minus 0.5mm - 1.2mm, preferably 0.7mm - 0.9mm.

18. A process according to claim 17, characterised in that the pressure between each structured roller and its corresponding counter stay is 50 - 200 Bar, preferably 65 - 100 Bar.
19. A process according to claim 16, characterised in that the surface element has a thickness T and that the distance between each glazing roller and corresponding counter stay is set in the range T minus 0.7mm - 1.2mm, preferably 0.7mm - 0.9mm.
20. A process according to claim 19, characterised in that the pressure between each glazing roller and its corresponding counter stay is 0.1 - 10 Bar, preferably 0.5 - 5 Bar.
21. A process according to any of the claims 1 - 8, characterised in that the structured surface of the mould is heated to a surface temperature above 40°C, preferably in the range 50°C - 150°C.
22. A process according to claim 21, characterised in that the pressure exercised by the structured mould surface is 50 - 200 Bar, preferably 65 - 100 Bar.
23. A process according to any of the claims 4 - 22, characterised in that the hard particles consists of for example silicon oxide, α -aluminium oxide or silicon carbide.
24. A process according to any of the claims 4 - 22, characterised in that the main part of the hard particles consists of for example silicon oxide, α -aluminium oxide or silicon carbide while a smaller amount of the hard particles consist of diamond.
25. A process according to claim 24, characterised in that the hard particles consisting of diamond is in the average particle size range 50nm - 2 μ m and is placed close to the upper surface of the wear layer.